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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,819	09/08/2003	Zeev Smilansky	27455	2876

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EXAMINER	
BITAR, NANCY	
ART UNIT	PAPER NUMBER
2624	

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08/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/658,819	SMILANSKY, ZEEV	
	Examiner	Art Unit	
	Nancy Bitar	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2 and 4-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-7,18-26 and 37-49* is/are rejected.

7)☒ Claim(s) *8-17 and 27-36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11-26-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments filed 04/09/2007 have been fully considered but they are not persuasive.

2. Claims 2 and 4-49 are pending

Rejection Under 35 U.S.C. ∋103

As to No Reason to Combine References, applicant argues that the examiner has not shown the requisite motivation or suggestion to modify or combine the Tumer and Hanko references to reach the presently claimed technique. Examiner believes that the references are properly combinable and had expanded on the motivation since the adjusted dynamic range of Tumer that includes the RENA-2 chip can be incorporate in Hanko video camera since the invention is able to dynamically adapt to a variety of different conditions and circumstances, (column 7, lines 17-35). In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As to The Reference Teach Away, applicant argues that Hanko system cannot employ the Tumer changeable dynamic range settings for the camera wherein the

image detection process adapts itself to the new dynamic range setting. Applicant assumes that Tumer does not teach a DRC process in communication with process to change the dynamic range settings but Tumer clearly teaches the dynamic range with respect to the RENA chip is adjustable or selectable to meet the requirement of various experiments thus the detection process will adapts itself based on the DRC. Moreover, Hanko et al teaches the video motion detection system that the changes in lighting are not confused with motion and the ability of the system to distinguish significant motion from other artifacts depends greatly on the policy used to references frames. Therefore, Examiner disagrees with applicant this point of view because by allowing the DAC range and resolution to be adjusted to the requirement of different experiments It would have been obvious to one of ordinary skill in the art to use the DRC in Hanko et al controller in order to take advantage of the observation that the degree of the variation in pixel value that occurs from frame to frame due to noise tends to be fairly well-defined and consistent in order to eliminate the effects of noise.

Claim Rejections - 35 USC ∋ 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2,4-7,18-26,37-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hanko et al (U.S. Patent 6,493,041), and Tumer et al(US Patent 2004/0017224)

As to independent claim 43, Hanko et al teaches a digital camera for producing an image of a scene (video camera 110); and a processor (130) associated with said camera (110), said processor adapted to run at least a dynamic range control process and an image processing detection process. Hanko et al teaches the invention is implemented with appliances and electronic devices using embedded processors and controllers and LCD but Hanko fails to teach fails to specifically teach the dynamic range control process is adapted to change the dynamic range settings of the camera. Specifically, Tumer et al et al. teaches an image processor including a circuit 0``component that control the dynamic range to be adjustable and switchable thus getting more accurate and faster output (paragraph [0075]). Moreover, Tumer clearly teaches the use of the DRC is adjustable or selectable to meet the requirement of the various sensors. By allowing the DAC range and resolution to be adjusted to the requirement of different experiments It would have been obvious to one of ordinary skill in the art to use the DRC (RENA-2)in Hanko et al controller in order to take advantage of the observation that the degree of the variation in pixel value that occurs from frame to frame due to noise tends to be fairly well-defined and consistent in order to eliminate the effects of noise. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to dependent claim 44, Hanko et al teaches the apparatus of claim 43, wherein the image processing detection process (an apparatus for detecting motion in video 110, column 5, lines 50-52) is configured to determine an initial parametric representation of the scene and to continuously update said parametric representation (each pixel location in an image is accurately and repeatable measured and a "value" is assigned to each pixel, column 5, lines 60-65) to slow changes in the scene (making the device to detect very slow moving objects, column 7, lines 17-25)

As to claims 5 and 6,Tumer et al teaches the apparatus of claim 43, wherein said image processing means comprises a DSP and a FPGA (the image processing includes DSP chips, paragraph [0234] and external controller FPGA, paragraph [0022]).

As to claim 45, Hank et al teaches the apparatus of claim 44,wherein said slow changes include changes in illumination (In a video motion detection system it is important that changes in lighting are not confused with motion, column 7, lines 16-25).

As to claim 46, Hanko et al teaches the apparatus of claim 43, wherein the processor(130) is configured to: determine an initial parametric representation of said scene (current reference frame,144) and update said parametric representation according to predefined criteria (new reference frame selector, 170, column8, lines 61-67); analyze pixels of said image so as to determine which of said pixels are hot pixels according to predefined criteria(motion detector 180 analyses the current frame to determine whether motion has occurred, column 8, lines 39-50 , in figure 4 step 425 determination is made whether the pixel difference is significant);define at least one

target from said hot pixels; measure predefined parameters for at least one of said at least one target ;and determine for at least one of said at least one target whether said target is of interest according to application specific criteria (a pixel difference counter that counts the number of significantly different pixels of the current frame is incremented at step 430).

As to claim 49, Hanko et al teaches the dynamic range control process is configures to match an amount of light captured by the camera to the sensitivity of the camera (column 7, lines 17-25).

As to claim 2, Hanko et al. teaches the apparatus of claim 46, wherein the processor is configured to track at least one of said at least one target, by measuring motion parameters of said target (motion detector 180 analyses the current frame to determine whether motion has occurred, column 8, lines 50-60).

As to claim 4, While Hanko et al meets a number of the limitations of the claimed invention, as pointed out more fully above, Hanko et al. teaches a digital and analog technique using a microprocessor (column 12, lines 15-20) but fails to specifically teach the digital camera is a CMOS type. Specifically, Tumer et al. teaches the use of (standard CMOS technology with good design practice, no special rad-hard technology is used, paragraph [0116]). Because the CMOS type camera of Tumer et al helps in raising the count by almost six million pixels and provide ISO sensitivity and fasten the shooting with a large and improved buffer it would have been obvious to one of ordinary skill in the art to use the CMOS technology of Tumer in Hanko et al in order to improve

the radiation tolerance. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 7, Hanko et al teaches the apparatus of claim 46, where the processor is configured to compute said initial parametric representation from a plurality of acquired images (same difference value threshold is applicable to a plurality of adjacent image elements of said first incoming video frame, column 14, lines 5-7).

As to claim 22,Hanko et al teaches the apparatus of claim 2, the processor is configured to match target with the same target in a previously captured image (pixel differencer 150 compares the difference between incoming and reference pixels against a constant threshold, figure1).

As to claim 47 and 48, Hanko et al teaches the apparatus of claim 43,where in digital camera has a frame size the order 1800 pixels and the image processing detection process is updates to process 1 frame per second and is adapted to process less that 30 million pixels per second (described as operating on pixels of an image frame, the invention may operate on other image elements, such as, for example, groups of pixels, column 12, lines 20-36)

As to claim 18,Hanko et al teaches the apparatus of claim 46, wherein the processor is configured to define at least one target comprises means for segmenting said hot pixels into connected components (image understanding techniques automatically segment a video image into regions of pixels that correspond to objects in a video camera's field of view, column 2, lines 22-30).

As to claim 19,Hanko et al teaches the apparatus of claim 46, the processor is configured to count the hot pixels in said target (difference counter, 165, Hanko et al, note that the difference counter keeps a count of the number of pixels for each frame that are significantly different from the corresponding pixels in the current reference frame, column 8, lines 41-45, column 10, lines 1-8).

As to claim 20, Hanko et al teaches the apparatus of claim 46, wherein the processor is configured to compute a rectangle circumscribing said target (The incoming image is divided up into rectangles, typically N x M rectangle, column 2, lines 31-44).

As to claim 21, Hanko et al. teaches the apparatus of claim 46, wherein the processor is configured to analyze said measured predefined parameters according to said application-specific criteria (motion detector180 analyses the current frame to determine whether motion has occurred, column 8, lines 50-60).

As to claim 22 and 23, Hanko et al teaches the apparatus of claim 2,wherein said means for measuring motion parameters comprises means for matching said target with the same target in a previously captured image (pixel difference 150 compares the difference between incoming and reference pixels against a constant threshold, figure1).

Claims 24-26,38-42 differ from claim 2,4-7,18-48 only in that claims 24-26,38-42 are method claim whereas, claim 2,4-7,18-48 are an apparatus claim. Thus, claims 24-

26,38-42 are analyzed as previously discussed with respect to claims 2,4-7,18-48 above.

Allowable Subject Matter

4. Claims 8-17 and 27-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar 7/25/2007

SAMIR AHMED
PRIMARY EXAMINER